

# COMMONWEALTH OF AUSTRALIA

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Family Name	
Given Names	
Student Number	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Teaching Period	Semester 2, 2015

FINAL EXAMINATION	DURATION
PHA213 – Pharmacology 2	
	Reading Time: 10 minutes
	Writing Time: 180 minutes

### INSTRUCTIONS TO CANDIDATES

The examination has 2 (A and B) Sections:

Section A contains Forty (40) Multiple Choice Questions. Answer all questions in the Faculty/School supplied Multiple Choice Answer Sheet. Total marks allocated: Twenty (20). Suggested time allocation: One (1) hour.

Section B contains Ten (10) Extended-Answer Questions. Answer any eight (8) questions only in the 20-page Booklet provided. Total marks allocated: Eighty (80). Suggested time allocation: Two (2) hours.

You can start writing or making written notes on the scrap paper provided during the 10-minute reading time.

### EXAM CONDITIONS

This is a CLOSED BOOK examination

No calculators are permitted

No handwritten notes are permitted

No dictionaries are permitted

Answer on the supplied examination material/s only

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 20 Page Book Faculty/School Multiple Choice Answer Sheet

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DOUBLE-SIDED.**

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**Section A**  
**Multiple Choice Questions**  
**Total No of Marks for this section: 20**

The answers for this section must be written on the Faculty/School Multiple Choice Answer Sheet provided. Please ensure that you write your name and student number on the Answer Sheet.

Answer **ALL** (40) questions.

0.5 mark for each question. Suggested time allocation for Section A: 60 mins

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**Sections B**  
**Extended Answer Questions**  
**Total No. of Marks for these Sections: 80**

These sections must be answered in the Answer Booklets provided.

**Answer ANY EIGHT (8) questions only.**

Marks for each section are indicated. Suggested time allocation: 120 mins

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**Question 1**

Describe the mechanism of action of the following agents in producing bacteriostatic or bactericidal effect. Identification of susceptible microorganisms or therapeutic applications is not required. For part a, explain the benefit of using this combined preparation.

- |   |                                  |           |
|---|----------------------------------|-----------|
| a | Amoxycillin with clavulanic acid | (4 marks) |
| b | Roxithromycin                    | (2 marks) |
| c | Norfloxacin                      | (2 marks) |
| d | Minocycline                      | (2 marks) |

**Question 2**

Describe the mechanism of action of the following cancer chemotherapeutic agents.

Identification of therapeutic applications is required for part a and part c (name **ONE (1) each**).

- |   |  |           |
|---|--|-----------|
| a | Anastrozole                              | (3 marks) |
| b | Bevacizumab                              | (2 marks) |
| c | Colaspase (also known as L-asparaginase) | (3 marks) |
| d | Etoposide                                | (2 marks) |

### Question 3 (multiple topics)

- a Two patients being treated with a neuroleptic Serenace® (haloperidol) develop symptoms of involuntary movements. On reducing the dosage, patient A's condition improves while patient B's condition worsens. Explain what has probably happened in each case and suggest **ONE (1)** agent which may be useful to resolve patient B's symptoms, including its mechanism of action. (6 marks)
- b Describe the action and use of sumatriptan in the management of migraine. What are the precautions when using this agent? (4 marks)

### Question 4

- a Describe in detail the mechanisms of action of the following therapeutic agents in improving depression. (4 marks)
- i. Fluoxetine
  - ii. Phenelzine
- b Strict dietary advice must be given to patients using one of these medications. Explain what can happen, including the mechanism for its occurrence, if this advice is not followed. (6 marks)

### Question 5

The following agents are used in the management of pain. Describe their mechanisms in inhibiting pain transmission, and the circumstances (origin and intensity of pain) where each of these agents is preferred.

- a Morphine (4 marks)
- b Ibuprofen (3 marks)
- c Carbamazepine (3 marks)

### Question 6

- a What advantages, if any, do the synthetic corticosteroids have over the natural hormone cortisol?  
(2 marks)
- b Outline the therapeutic uses of glucocorticoids (for example beclomethasone) in *non-endocrine* disease and **SIX (6)** adverse effects associated with long-term administration.  
(5 marks)
- c How can these adverse effects (in b) be managed or avoided?  
(3 marks)

### Question 7

- a Explain how the physicochemical properties of inhaled general anaesthetics can determine their speeds of onset of action and their potencies.  
(5 marks)
- b Name **TWO** (2) different classes of adjuncts which are used to enhance surgical anaesthesia. Describe their mechanisms of action and explain the advantages of using these agents.  
(5 marks)

### Question 8 (multiple topics)

- a Discuss the **THREE** (3) pharmacologically-useful properties of therapeutic agents used for epilepsy. Give examples.  
(6 marks)
- b Describe the mechanisms of action of **TWO** (2) different classes of therapeutic agents commonly used to manage Parkinson's disease.  
(4 marks)

### Question 9

BB took a few temazepam tablets with some alcoholic drinks. Shortly afterwards, he was found minimally responsive with slow and shallow breathing.

- a Explain what has probably happened. Include in your answer the mechanism of action of temazepam.  
(5 marks)
- b How could BB be treated?  
(2 marks)
- c Explain the differences between temazepam and pentobarbitone (a barbiturate) with regard to their mechanisms of action and the clinical consequences of drug overdose.  
(3 marks)

### Question 10 (multiple topics)

- a Describe how ethanol is eliminated from the body (drawing a flow diagram without an explanatory note is NOT an acceptable answer). Include in your answer the enzymes involved and the rate limiting factor.  
(6 marks)
- b Describe what is in the combined oral contraceptive pills and how these agents produce their effects on the female reproductive cycle to prevent pregnancy.  
(4 marks)

End of Section B

End of Exam Paper